

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A disposable test strip for use in a test meter of the type which receives a disposable test strip and a sample of blood and performs an electrochemical analysis of the amount of a blood analyte in the sample, comprising:
  - (a) a substrate;
  - (b) a first conductive element disposed on the substrate;
  - (c) a second conductive element disposed on the substrate in sufficient proximity to the first conductive element to allow the completion of an electrical circuit between the first and second conductive elements when a sample of blood is placed on the test strip;
  - (d) a non-conductive integrated reagent/blood separation layer disposed over the first conductive element, said integrated reagent/blood separation layer comprising reagents for the electrochemical detection of the analyte dispersed in a non-conductive matrix effective to exclude blood cells from the surface of the first conductive element while permitting access to the first conductive species by soluble electroactive species wherein the pH of said integrated reagent/blood separation layer is buffered to a level of around pH5;
  - (e) contacts for making an electrical connection between the first and second conductive elements and the test meter; and
  - (f) an insulation layer disposed over at least the first conductive elements, said insulation layer having a first aperture therein aligned with the first conductive element, wherein the non-conductive integrated reagent/blood separation layer contacts the first conductive element through the aperture in the insulation layer and wherein the non-conductive integrated reagent/blood separation layer is formed covering the entire first aperture, thereby leaving no portion of the first conductive element directly exposed to a sample applied to the test strip.

2. (Original) The test strip of claim 1, wherein the integrated reagent/blood separation layer comprises an enzyme for oxidation of glucose and a redox mediator effective to transfer electrons from the enzyme to the first conductive element.
3. (Original) The test strip of claim 2, wherein the matrix comprises silica having both hydrophobic and hydrophilic surfaces.
4. (Original) The test strip of claim 3, wherein the first and second conductive elements comprise conductive carbon.
5. (Original) The test strip according to claim 4, wherein the enzyme is glucose oxidase.
6. (Original) The test strip according to claim 5, wherein the redox mediator is ferricyanide.
7. (Original) The test strip according to claim 3, wherein the integrated reagent/blood separation layer is formed from an aqueous composition comprising 2 to 10% by weight of a binder; 3 to 10% by weight of silica; 8 to 20% by weight of the redox mediator; and 1000 to 5000 units of the enzyme per gram of the aqueous composition.
8. (Original) The test strip of claim 7, wherein the first and second conductive elements comprise conductive carbon.
9. (Original) The test strip according to claim 7, wherein the enzyme is glucose oxidase.
10. (Original) The test strip according to claim 9, wherein the redox mediator is ferricyanide.
11. (New) The test strip of claim 1 wherein the buffer is citrate.
12. (New) A disposable test strip for use in a test meter of the type which receives a disposable test strip and a sample of blood and performs an electrochemical analysis of the amount of a blood analyte in the sample, comprising:
  - (a) a substrate;
  - (b) a first conductive element disposed on the substrate;
  - (c) a second conductive element disposed on the substrate in sufficient proximity to the first conductive element to allow the completion of an electrical circuit between the first and second conductive elements when a sample of blood is placed on the test strip;
  - (d) a non-conductive integrated reagent/blood separation layer disposed over the first conductive element, said integrated reagent/blood separation layer comprising reagents for the electrochemical detection of the analyte dispersed in a non-conductive matrix of silica fillers effective to exclude

blood cells from the surface of the first conductive element while permitting access to the first conductive species by soluble electroactive species; contacts for making an electrical connection between the first and second conductive elements and the test meter; and

- (e) an insulation layer disposed over at least the first conductive elements, said insulation layer having a first aperture therein aligned with the first conductive element, wherein the non-conductive integrated reagent/blood separation layer contacts the first conductive element through the aperture in the insulation layer and wherein the non-conductive integrated reagent/blood separation layer is formed covering the entire first aperture, thereby leaving no portion of the first conductive element directly exposed to a sample applied to the test strip.

- 13. (New) The test strip of Claim 12 wherein said nonconductive matrix further comprises a material chosen from the group consisting of hydroxyethyl cellulose, citrate, polyvinyl alcohol, and polyvinyl pyrrolidone-vinyl acetate.
- 14. (New) The test strip of Claim 1, wherein said non-conductive matrix further comprises a citrate buffer.